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AUTHOR Fuller, Gerald R.; Annis, William H.
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ABSTRACT

A study determined the feasibility of implementing a regional teacher education program in agricultural education using distance learning techniques. Information was obtained in 1991 in the six New England states through interviews with 29 administrators and faculty at land grant universities and 19 administrators and staff in state governments. Results showed that 112 secondary school programs employed 261 licensed teachers. Usually, 10-16 new teachers were needed each year during the 1980s; that need was expected to increase. Five states had teacher education programs in agricultural education, with a total of 36 students enrolled in teacher licensing programs. Within these five states were an equivalent of 5.05 full-time-equivalent teaching faculty; the equivalent of 2.9 faculty spent full time preparing students to teach agricultural and natural resource subjects. Key elements necessary to success of a regional program were commitment, incentives, and teacher education program change. Recommendations related to teacher education include implementation of a regional distance learning program and identification of a common core of pedagogical learning in agricultural teacher education for the region. Recommendations for public school programs include providing leadership to facilitate restructuring of agricultural education in public schools. (Appendixes include additional comments, eight graphs, and executive summary with highlights.) (YLB)

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New England Feasibility Study for a Regional Agricultural Teacher Education Program

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University of New Hampshire

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NEW ENGLAND AGRICULTURAL TEACHER EDUCATION

TASK FORCE REPORT

EXECUTIVE SUMMARY

This summary illuminates the highlights of the study requested by the Presidents of the New England Land Grant Universities to investigate the feasibility of implementing a regional Teacher Education Program in Agricultural Education.

Information was obtained in 1991 in the six New England states through interviews with 29 administrators and faculty at Land Grant Universities and 19 administrators and staff in State governments. A total of 72 people were invited to participate, and 48 (66.6 %) accepted the invitation. Leaders in New York state are interested in exploring whether a New England and New York partnership would be feasible.

This project studied what is happening in agricultural teacher education, what is happening in grades K-12 plus vocational-technical centers/high schools, and what is projected for the future. Trends in public schools directly influence teacher education.

When viewed as a region, the scale of the public school Agricultural Education program in New England is presently large enough to merit attention even before the foreseen expansion occurs. In 1990, there were 112 secondary school programs employing 261 licensed teachers. It was reported that usually from 10 to 16 new teachers have been needed each year during the decade of the 1980's and the need is expected to increase.

Teacher education when examined on a New England region-wide basis also has a critical mass that justifies attention. In 1990, there were 36 students enrolled in programs leading to a license in Agricultural Education. A total of 5.05 full-time equivalent faculty in five of the six New England States were identified as having responsibilities for agriculture teacher education. Of this number, 2.99 full-time equivalent teaching faculty spent full-time in the teacher education program.

There was a strong and consistent message from higher education and state government that the number of Agricultural Education offerings in public schools can definitely be increased. However, it was made abundantly clear that the status quo in public school Agricultural Education is not acceptable.

Secondary Agricultural Education programs in public schools should follow closely the emerging program patterns of colleges of agriculture. The earnest message was that more emphasis must be placed upon science and technology, and developing cooperative linkages with science educators in secondary level academic programs. Connections with post-secondary institutions must be enhanced. There was definite support for expansion of education about agriculture and careers in agriculture at all grade levels.

Teacher education in New England must be positioned to continue to meet both current and future needs. When these changes are implemented there will be an escalated need for new teachers in each state, and an expansion of demand for regional in-service education initiatives in both subject matter and pedagogy for teachers of career preparation programs and for all teachers of agriculture in general.

There is a consensus among the parties interviewed that regionalization of programs in Land Grant Universities is appropriate and needed. The Agricultural Teacher Education program is one that could be implemented on a regional basis within the parameters of acceptable risk.

Key Elements Needed for Success

As a result of this survey, key elements necessary to the success of a regional program were identified. They are:

A. Commitment: All parties involved must be a committed to the concept of regional programs through distance learning.

An agreement on purposes, policies, and operating procedures should be in place at the outset. This should offset a potential problem in long-term unity of purpose due to a continuing trend of high turnover in the ranks of upper level administrators in both state government and land-grant institutions.

The time for regional cooperation, though fraught with difficulties, has come. It is no longer economically feasible for institutions to each offer low-enrollment courses when distance learning is readily available.

B. Incentives: Students must be interested and desire to participate in this distance learning model and practicing professionals must support it.

Students should not have to pay out-of-state tuition for course credit earned through distance learning. A means of cost analysis must be devised and agreed upon which will allow the costs of the program to be allocated on a use basis.

The cost of the regional program once it becomes operational should not exceed the existing cost, and the regional program should be more cost efficient within each institution than what is now being done.

Distance learning will develop trust among the political sub-divisions involved and allow for the needed cohesiveness of purpose.

C. Teacher education program change: The 1988 Task Force identified and agreed upon common elements for a regional agricultural teacher education program. This model should be refined and instituted in this distance learning project.

Agricultural Education students will be required to complete a subject matter major in Colleges of Agriculture and Life Sciences and supplement this major with pedagogy leading to licensing.

Distance learning will allow the development of in-service teacher education program offerings taught by subject specialists within the region for teachers of Agriculture, Extension Agents, and members of the private sector industry.

Conclusions

The data collected supports the following conclusions:

1. Teacher education in agriculture deserves consideration as a viable regional program that can be offered through distance learning.

2. The ten year downsizing of the scale of the teacher education enterprise has resulted in the need for new approaches in delivering essential services.

3. Teacher education in agriculture will have a more viable future if appropriate changes occur in the public school programs for career preparation, and if there is an intensification of teaching about agriculture in grades K through 12.

4. There is increased interest in distance learning to provide subject matter instruction in Biotechnology, Agriscience and production to preservice and in-service teachers of agriculture and others who would benefit. This would allow the unique strengths of each university to be shared throughout the New England Region.

5. Colleges of Agriculture and Life Sciences must become partners with the public schools and aggressively help bring about the appropriate restructuring.

6. An unanticipated finding of this study is how clearly the respondents recognized the need for the public schools offering Agricultural and Natural Resources Education to update their programs.

7. It was surprising to learn that the capacity for State Departments of Education to provide leadership to bring about change in the public schools programs of Agriculture and Natural Resources Education has been seriously eroded within New England.

Recommendations

A. Teacher Education -

1. Implement a regional distance learning teacher education program in Agricultural Education at the New England Land Grant Universities (except MIT).

2. Designate one of the six New England Land Grant Universities as the lead institution to provide leadership for this project.

3. Appoint a project steering committee with representatives from each participating state to develop a statement of purposes, policies, and operating procedures to which all participating parties agree.

4. Identify a common core of pedagogical learning in Agricultural Teacher Education for the region.

5. Obtain extramural funding to support the extra cost of the project during the developmental years.

6 Implement the action steps of the model regional teacher education program defined by the Fairchild Task Force.

B. Public school programs -

1. Provide leadership (New England Land Grant Universities) to facilitate the restructuring of Agricultural Education in New England's public schools.

2. Appoint a person to prepare and submit a proposal to the National FFA Foundation, The National Council for Agricultural Education, and other funding sources requesting assistance and funding to establish a New England Task Force on Restructuring of Agricultural Education.

NEW ENGLAND AGRICULTURAL TEACHER EDUCATION

TASK FORCE REPORT

1. Introduction

University presidents and college deans constantly make decisions about the allocation of scarce resources. In New England, the Presidents of Land Grant Universities saw the need for regional cooperation. They questioned whether all instructional programs should be replicated in each of the states. It was within this context that in November 1986, the Deans of colleges of life sciences, agriculture, and natural resources at the New England Land Grant Universities held a workshop on the topic "Regional Cooperation in Academic Programs." This workshop was partially funded by the Kellogg Foundation through the New England Center of Continuing Education.

As a follow-up to this workshop, the agriculture teacher education faculties of the six New England Land Grant Universities met to explore ways in which regional collaboration could be expanded. Since experience with regional programs had demonstrated that most students interested in agricultural education prefer to attend their home institution, the problem was to find a way to provide students in all the New England states with easy access to high quality, cost effective instruction in this field. This workshop was also partially funded by the Kellogg Foundation through the New England Center.

It was recommended to the deans that a New England Task Force on Agricultural Teacher Education be established. The Task Force developed a proposal calling for the delivery of agricultural teacher education on regional basis in New England. The deans endorsed this recommendation and appointed a task force consisting of professionals representing agricultural teacher education, state consultants of agricultural education, and teachers of agriculture. The group was chaired by Dr. Thomas Fairchild, Dean, College of Life Sciences and Agriculture, University of New Hampshire.

The 1989 report of the Fairchild task force was presented to the deans and then to the University presidents. The presidents responded by requesting a feasibility study, Funding for the project was provided by the College of Life Sciences and Agriculture, and the Academic Vice President's Office, University of New Hampshire. The College of Agriculture and Life Sciences of the University of Vermont contributed faculty time to the project.

2. Purpose

The purpose of the study was to determine the feasibility of implementing a regional teacher education program in Agricultural Education using distance learning techniques.

3. Definitions

Agricultural Education

Agricultural Teacher Education includes preparing students for licensing, preparing elementary and secondary teachers to teach about agriculture, planning and providing continuing in-service education for teachers.

4. Design

Leaders in Agricultural Education were contacted at state and university levels in all six New England states. Because of the initiative of Commissioners of Education in forming the Northeast Regional Credential for Educators in New England and New York Program for Certification, it was decided to include New York State in the study. Only New England data are reported in this document. However, the Dean and faculty at Cornell University are interested in the concept of a New England/New York program. For the purposes of this study the people in the following positions were asked to be interviewed.

Land-Grant Colleges and Universities

- Academic Vice Presidents
- Deans of Colleges of Agriculture
- Deans of Colleges of Education
- Associate Deans of Colleges of Agriculture
- Department Chairs responsible for Agricultural Teacher Education
- Agricultural Teacher Educators

State Government

- Commissioners of Agriculture
- Commissioners of Education
- Directors of Vocational Education
- State Consultants responsible for Agriculture Education Programs
- State Teacher Certification Officers

Agriculture in the Classroom Contact Persons

The design used a personal interview technique. Questionnaires were developed for each position. The appropriate person in each position was invited by mail to participate in the study. On-site interviews were conducted. If a person did not respond to the initial invitation either a follow-up letter or telephone call was used to seek an appointment. In some cases a questionnaire was sent rather than conducting the follow-up visit.

There were 72 people who received letters asking their participation in the study. Of the 72, 48 responded and were interviewed for a 66.6 percent return. Of 36 people contacted in the land-grant universities, 29 responded for a rate of return of 80.55 percent (Graph 1). There were 36 people contacted in state government with 19 participants in the study for a 52.77 percent participation rate (Graph 2). Of the 7 Agriculture in the Classroom contact people, 4 or 57 percent were interviewed (Graph 2).

5. Findings

A. The Size of the Enterprise

Public Schools: There were 112 public secondary schools, employing 261.5 teachers offering agricultural, and natural resource education in New England in 1990 (Graph 3). These offerings ranged from one teacher departments in comprehensive high schools to a Massachusetts county agricultural high school with 18 teachers.

It was reported that between 10 and 16 new teachers were needed each year since 1980. This represents a constant need for replacements who have a minimum of a baccalaureate degree to be certified by the licensing boards of their respective State Departments of Education. It should be noted that a master's degree is an expectation for continued employment. There are several secondary teachers of Agriculture, and Natural Resources Education who hold doctoral degrees.

There was consensus that the number of new teachers needed each year will increase when Agriculture Education programs at all grade levels are updated in public schools. As many as 26 new teachers will be needed in an average year.

New England Agricultural Teacher Education: In 1990, five of the New England states had teacher education programs in Agricultural Education with a total of 36 students enrolled in teacher licensing programs (Graph 3 and 6). Of these, 22 completed the respective state certification requirements (Graph 4 and 7).

Within the five states offering teacher education programs, there was an equivalent of 5.05 FTE teaching faculty. Of these the equivalent of 2.9 faculty spend full time preparing students to teach agricultural and natural resource subjects (Graph 5).

6. Key Elements Reported as Necessary to make a Regional Program Successful

A. Commitment: All parties involved must be committed to the concept of regional cooperation including interstate distance learning programs.

Examples of commitment to regional cooperation currently exist. New England state education departments cooperate in the licensing of professionals, interstate school district attendance, and professional development to name a few. The Cooperative Extension Service faculty in the New England states are currently studying ways of expanding regional cooperation. A New England/New York Agriculture in the Classroom Consortium has been functioning for over seven years.

The time to expand regional cooperation among the New England Land Grant Universities, though fraught with difficulties, has come. It is neither economically feasible, nor educationally sound for institutions to each offer low-enrollment courses when distance learning is readily available.

An agreement on purposes, policies, and operating procedures for this regional distance learning project should be in place at the outset. This will offset potential problems in the long-term unity of purpose which may occur as a result of the turnover in the ranks of upper level administrators and middle level managers in both state government and land-grant institutions.

B. Incentives: Students and practicing professionals must be assured that a regional program, including distance learning, will be equal to or better than programs currently available for pre- and in-service education.

Reciprocity for initial and continuing certification must occur among participating states.

Distance learning course costs should not exceed the cost of in-state courses.

A cost analysis procedure must be devised and agreed upon which will allow the costs of the

A cost analysis procedure must be devised and agreed upon which will allow the costs of the program to be allocated among institutions on a use basis.

The cost of the regional program once it becomes operational should not exceed the existing cost, and the regional program should be more cost efficient within each institution than what is now being done.

The Agricultural Teacher Education regional program, including distance learning, will serve as a model for the development of other regional educational initiatives.

Colleges of agriculture, natural resources, and forestry will be able to use distance learning techniques to offer regional courses in their specialty areas i.e. Agricultural Engineering (UofM), Horses (UNH), Livestock (U Conn.), Sustainable Agriculture (UVM), Turf (URI), Vegetable Crops (U Mass.).

Distance learning will develop trust among the political sub-divisions involved and allow for the needed cohesiveness of purpose.

C. Teacher education: The 1989 Task Force identified and agreed upon common elements for a regional agricultural teacher education program. The model should be refined and implemented. Students will be required to complete a subject matter major in Colleges of Agriculture, Forestry and/or Natural Resources and to supplement this major with the pedagogy leading to licensing.

A Regional Agricultural Teacher Education preservice program that includes distance learning will allow students to benefit from the unique strengths of each agricultural teacher educator within New England.

A Regional Agricultural Teacher Education in-service program which includes a distance learning will allow teacher educators to deliver programs based on the needs of the teachers in the region utilizing both teacher educators and subject specialists. These programs could be offered to teachers in Agricultural Education, other teachers, Extension Agents and members of the private sector.

D. The Public School Program

Recognizing that this was a study of higher education programs in Agricultural Education, the authors felt a need to report on the many comments from both the institutional and state government personnel on the necessity to update the agricultural education model in the public schools. Secondary Agricultural Education programs should follow closely the emerging program patterns of colleges of agriculture. This strong message that more emphasis must be placed upon science, technology and developing cooperative linkages with science educators in secondary level academic programs must not be overlooked.

There is a bright future for the Agricultural Education programs in New England's public schools. If appropriate curriculum changes are made expansion will occur in both elementary and secondary schools.

CONCLUSIONS

When one views Agricultural Teacher Education on a regional basis it is an enterprise which is larger than many of the current programs supported by individual Land Grant institutions and therefore, deserves consideration as a viable regional program that can be offered through distance learning. The elements identified as being key to the success of a regional program are obtainable and the land grant institutions in New England should implement this program.

Teacher education in Agriculture will have a viable future when appropriate changes occur in the public school programs. The need for positive change in public school programs was forcefully stated by both land-grant university and state departments of education personnel. Colleges of agriculture and life sciences should become partners with the public schools to aggressively help bring about the appropriate restructuring.

The capacity for State Departments of Education to provide leadership to bring about change in the public schools programs of Agriculture, including the FFA, has been seriously eroded in New England. As of the writing of this report, four of the six states do not have designated supervisors of agricultural education. These duties have been assigned to other consultants as add-ons.

There is currently an initiative in vocational-technical education to improve articulation with post-secondary institutions. This "Tech Prep" articulation initiative, which provides secondary with advanced placement in technical colleges, coupled with an increased emphasis on science and technology in agricultural education should expand the population from which colleges of agriculture recruit students.

This project confirms the findings of the 1989 Fairchild Task Force study on agricultural teacher education which indicated a need to include elementary and middle school students in awareness programs.

The results of this study support the findings of the National Academy of Science study, "Understanding Agriculture" which concluded that agricultural and natural resources education should include an awareness program for elementary and secondary students.
This study,"Understanding Agriculture" was undertaken by the National Academy of Science to set directions for agricultural education k - 12.

This study is in agreement with the National Council on Agricultural Education's Strategic Plan for Agricultural Education which addresses
the need for restructuring agricultural education in the public schools of the nation (K - 12).

Recommendations

A. Teacher Education -

1. Implement a regional distance learning teacher education program in Agricultural Education at the New England Land Grant Universities (except MIT).

2. Designate one of the six New England Land Grant Universities as the lead institution to provide leadership for this project.

3. Appoint a project steering committee with representatives from each participating state to develop a statement of purposes, policies, and operating procedures to which all participating parties agree.

4. Identify a common core of pedagogical learning in Agricultural Teacher Education for the region.

5. Obtain extramural funding to support the extra cost of the project during the developmental years.

6. Implement the following action steps of the model regional teacher education program defined by the Fairchild Task Force:

Invite all Land Grant Universities in New England to participate in this project.

Develop three Agriculture teacher education courses to be offered on a regional basis using distance learning techniques (i.e., 1. Methods and materials for teaching that are unique to this field, 2. Foundations and current issues unique to the field, 3. Program planning and curriculum development).

Use existing general professional education courses at each institution to meet licensing requirements (i.e., Early observation and participation experiences in schools, Educational Psychology, Foundations of Education, Special Education).

List the Agricultural Teacher Education regional courses in the catalogs and time and room schedules of each participating institution.

Designate one person at each institution to be the coordinator for Agricultural Teacher Education. (It is recognized that these duties may be only a part of the person's full time employment.) This person duties will include supervising student teaching experiences of those students placed within that state, advising and recruiting students, and planning and coordinating in-service learning activities for experienced teachers. This person will also serve as a mentor to the students in the Agricultural Education distance learning courses.

B. Public school programs -

1. Provide leadership (New England Land Grant Universities) to facilitate the restructuring of Agricultural Education in New England's public schools.

The following action steps be taken:

Appoint a person to prepare and submit a proposal to the National FFA Foundation, The National Council for Agricultural Education, and other funding sources requesting assistance and funding to establish a New England Task Force on Restructuring of Agricultural Education. This Task Force will make recommendations about the necessary leadership and assistance for redefining, implementing, and operating programs of Agricultural Education in public

schools in each state in New England. Special attention will need to be given to providing state program leadership, including the FFA.

Designate a person from each College of Agriculture and Natural Resources to help the FFA, Agriculture in the Classroom, and 4-H In-school programs implement and expand systematic instruction about agriculture, natural resources, and careers.

APPENDIX

The Future

This is a summary of additional comments which were received during the interview process.

A. The public school programs

Secondary school centers of agricultural science education must broaden their definition to include environmental protection. Programs should provide instruction about decision making skills and entrepreneurship. These centers should provide the technical training needed for management level occupations. Traditional production focused programs should continue to teach the basic skills needed where facilities are adequate to maintain animal and plant production activities.

There must be an increase in instruction in all grades about agriculture, natural resources, and the food and fiber chain. There should be more attention given to introducing students to agricultural science and technology, including an introduction to the available careers in these field.

The scope of the FFA must be widened to provide more students with access to the learning experiences and activities offered through this premier youth organization.

B. Land Grant Colleges and Universities

Teacher education in agriculture will continue to be offered at land grant universities and the research missions of the various state institutions will differentiate the land-grant institutions form other institutions. The total number of faculty in colleges of agriculture will decrease, then level-off.

Unless changes in the public school offerings are made,there will be less need for secondary agriculture teachers, and land-grant universities will put less emphasis on agricultural teacher education. If changes are made, deans will need to support the replacement of teacher educators to meet the future needs for teachers in the public schools.

Colleges of agriculture will focus upon state needs (i.e. sustainability of agriculture, protection of the environment, human resource development in the rural communities). What we have known as the traditional agricultural subjects will continue to receive less emphasis. More emphasis

will be placed on the biological sciences. Unless public school programs align themselves with the agricultural-bioscience technology fields agricultural teacher education will become less important in the minds of Deans and state Commissioners of Education.

Economic conditions and state budgets will influence the direction of Land Grant colleges and universities. Institutions may be driven toward specialization within the state and within the region, no longer being "everything for everybody." Economic conditions will promote ventures across state lines, such as "Centers of Excellence" within the region.

Agricultural teacher education must be a part of the central mission of a college of agriculture or a college of education to meet institutional requirements for a "program" (ex. Research - - obtain extramural funding; Outreach - - assess the state's/region's needs; Teaching - - maintain an appropriate student/faculty ratio). The roles of the colleges of agriculture and the colleges of education in respect to agricultural teacher education must be reassessed in light of this distance learning project. Programs must maintain a critical mass and retain a low per-student cost. Programs will be cut back as fewer teachers are needed in the public schools. Existing programs will continue as long as present faculty remain.

As the secondary programs change and diversify there will be a need to provide in-service teacher education on a regional basis through this distance learning project.

C. State Departments of Education

The problems of the 1990 recession weighed heavily upon all state employees. All saw a need to maintain strong programs of teacher education which can relate the changing nature of the work force to their students. All were supportive of maintaining strong state leadership in all areas of vocational education, including agriculture.

Licensing will become more generic, and more inter-disciplinary rather than single subject licensing. State licensing agencies should not waive requirements when establishing alternative programs. Instead they should require that persons in alternative programs leading to licensing have the same competencies as the graduates from approved programs.

All New England state departments of education currently participate in two interstate licensing compacts, the Northeast Regional Credential Program (NRC) and the Interstate Certification Compact (ICC). New York is a member state in both of these compacts.

The approval of institutions to offer teacher licensing programs is a state controlled process. New England Universities should agree on a common description for a regional agricultural teacher education program. When state approval is granted in all states there would be a truly regional program. As a minimum, a regional program must meet the highest standards set by any member state.

D. Teacher education (comments by the investigators)

The role of agricultural teacher educators will change. Undergraduate and graduate teacher eduction will continue to prepare students to teach in secondary level career preparation programs. However, the teacher educator will have expanded responsibilities for helping prepare all teachers (elementary, middle and secondary) to teach about agriculture. Special

attention will be given to developing team teaching abilities and thematic instruction built around agriculture and natural resources. Faculty with teacher education responsibilities may need institutional support to "re-tool" for their new role.

The demand for regional, statewide, and local in-service education will increase. In-service activities will need to expand to serve all teachers, and continue to serve the unique needs of agriculture and natural resources teachers. Teacher educators may see a trend toward more non-university credit in-service activities and summer programs.

There will be new players in the schools. Public and private organizations will be forming partnerships with schools to deliver education about food, agriculture, and natural resources. Teacher educators will need to provide leadership to assure that systematic education occurs throughout the 12 years of schooling. In addition, teacher educators will have to provide leadership to assure that what is being taught is correct and appropriate.

More public school programs of Agricultural Education will have articulation agreements with post-secondary institutions. Teacher educators will need to serve as a liaison between colleges and public schools.

The Land Grant Universities will have to provide leadership in curriculum development and its implementation in each state as state departments of education loose the capacity to specifically address Agricultural Education and the FFA. The service role of teacher educators will need to be fully recognized.

final9.ol

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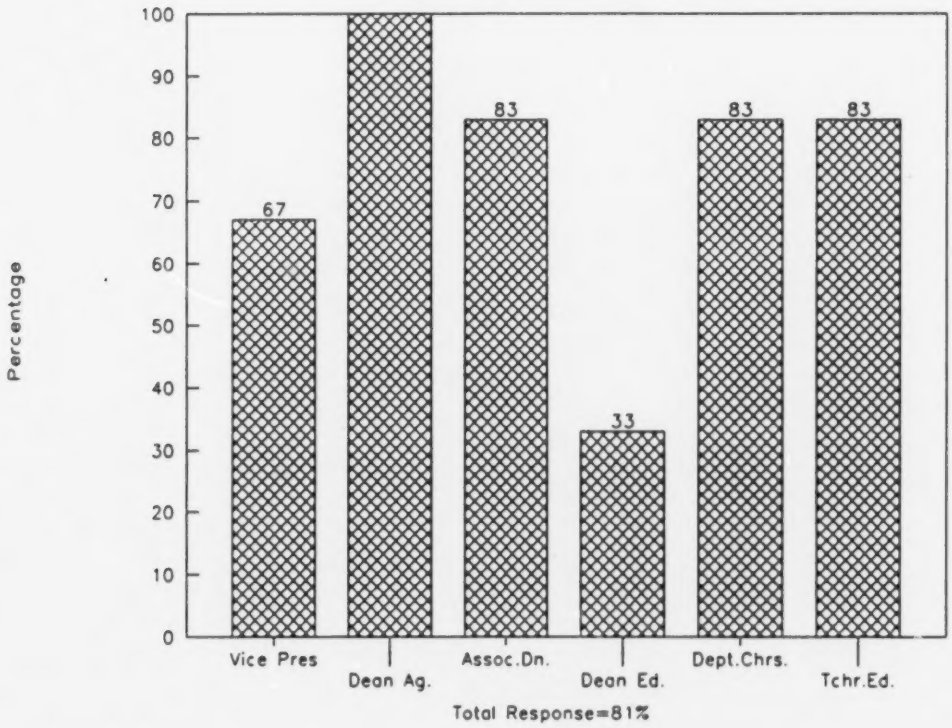
Appendices

Graph 1

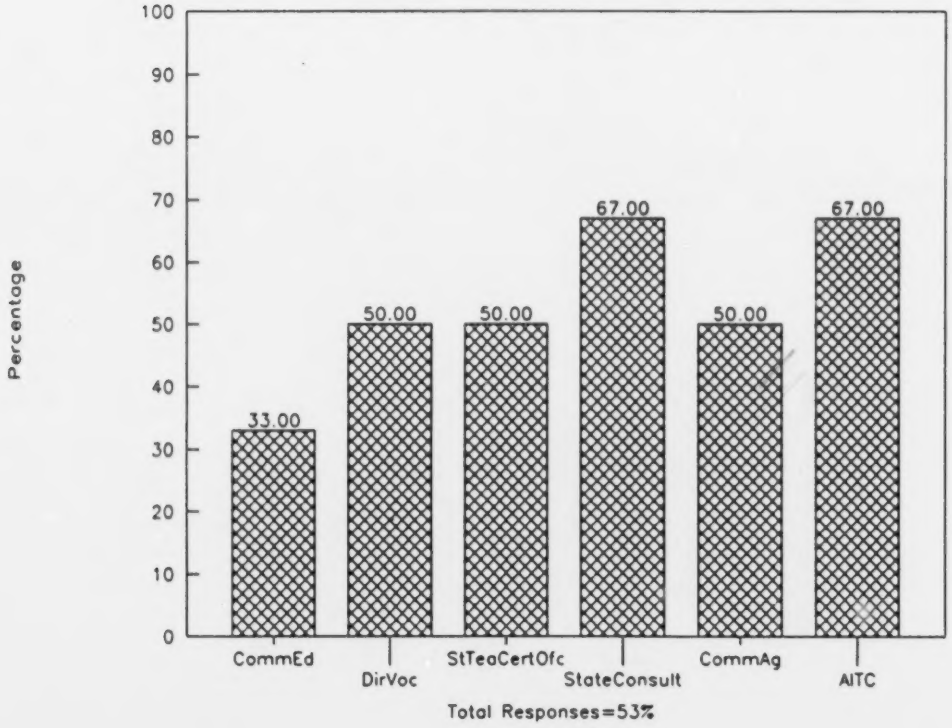
% Responses – Higher Education



Total Response=81%

Graph 2

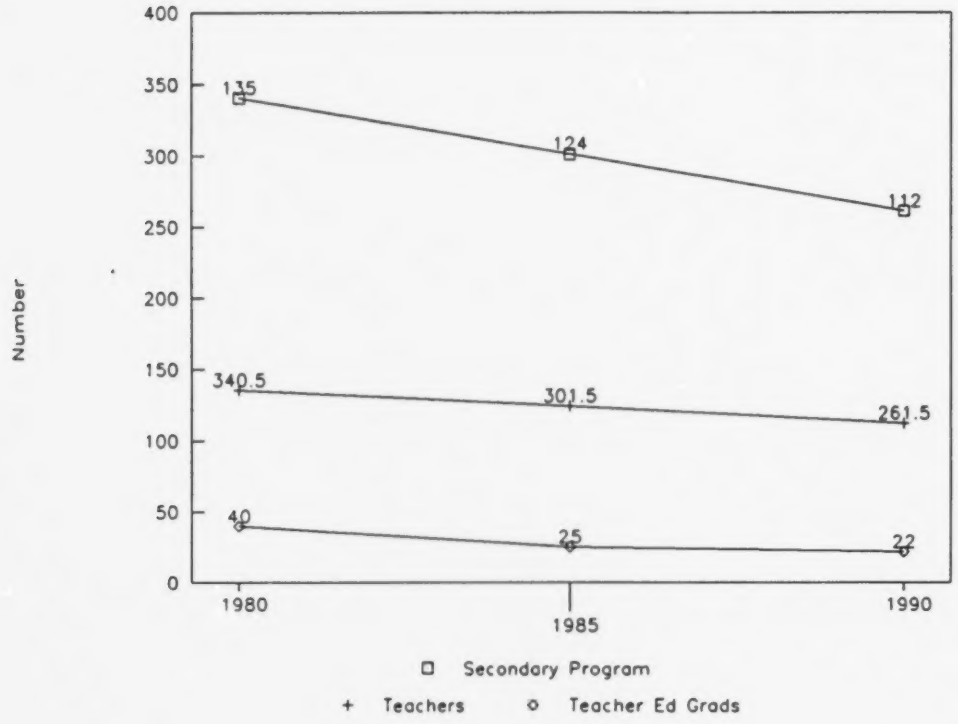
% Responses – State Government



Total Responses=53%

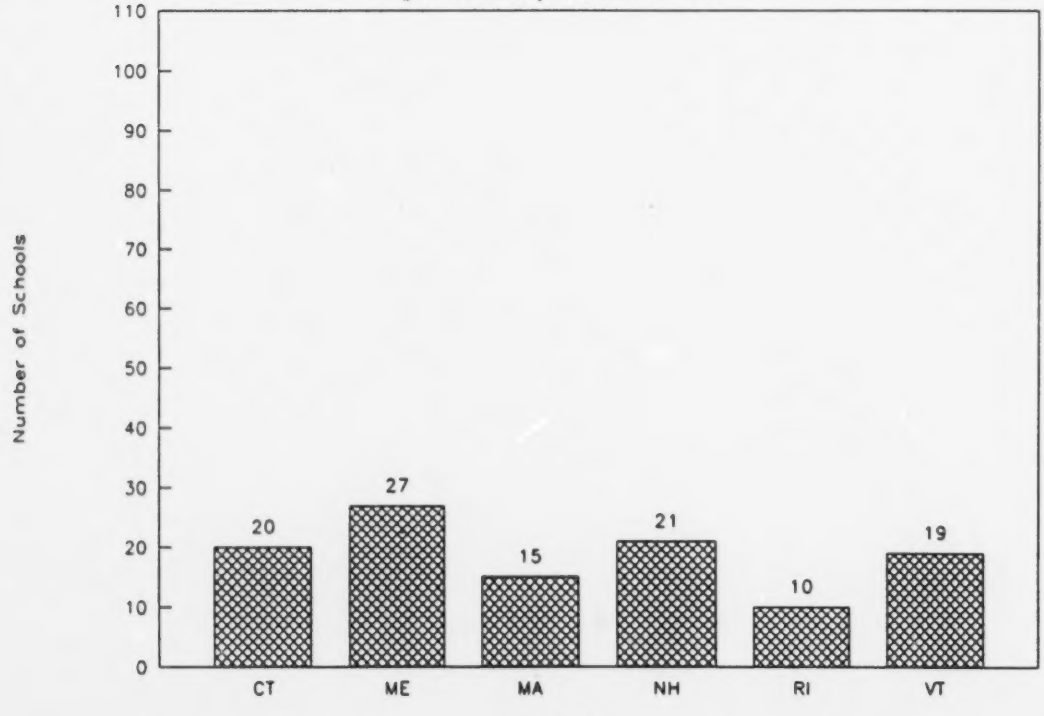
Graph 3

Programs, Teachers, Graduates



Graph 4

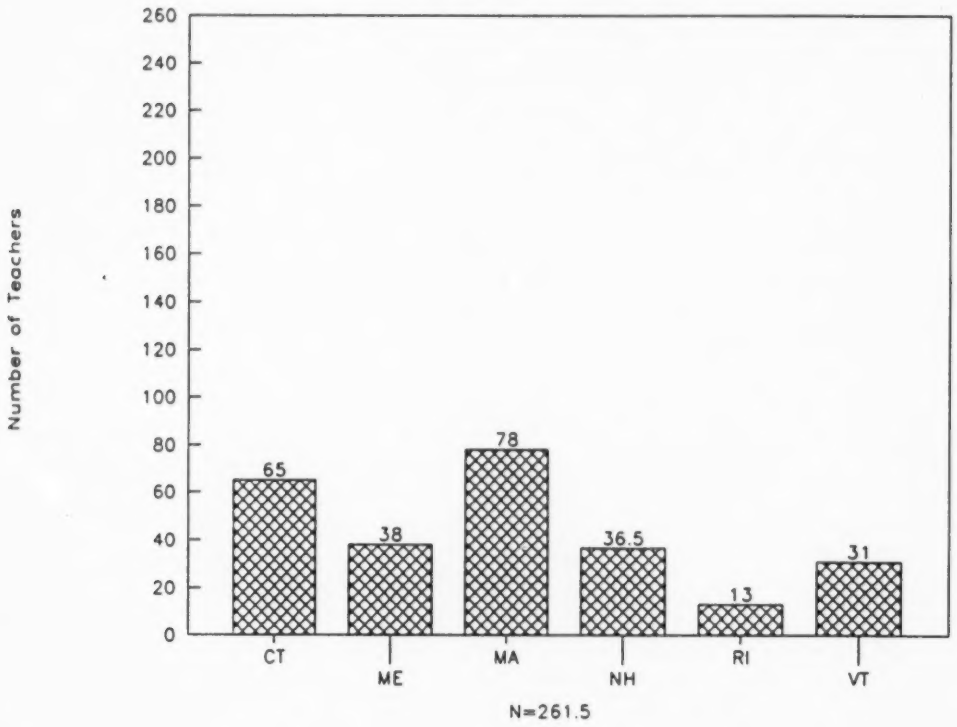
of Secondary Schools – 1990



N=112

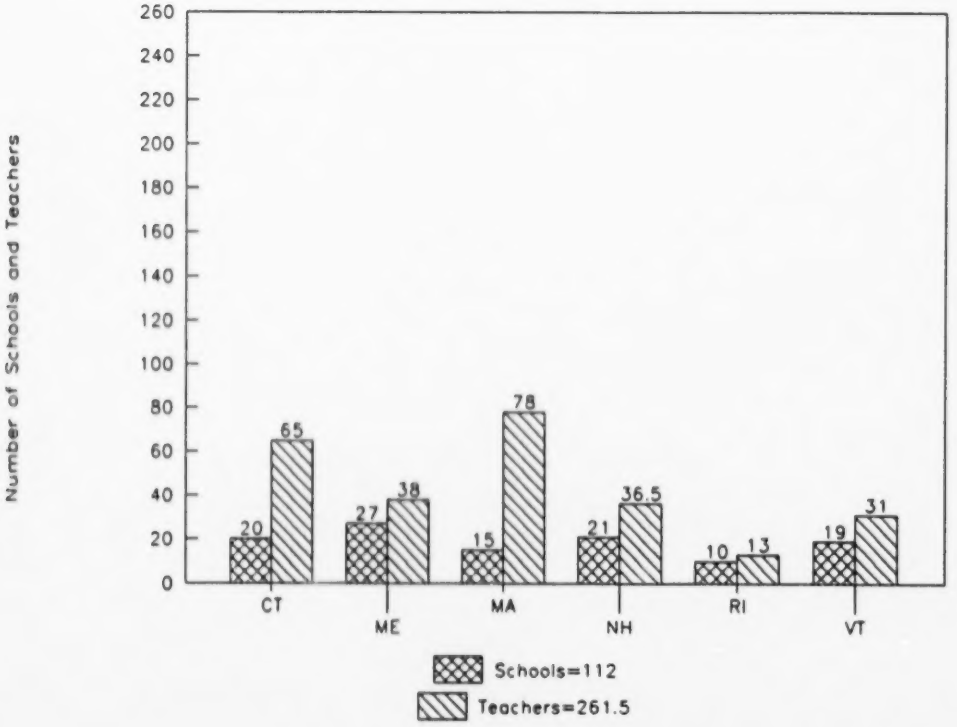
Graph 5

of Secondary Teachers – 1990

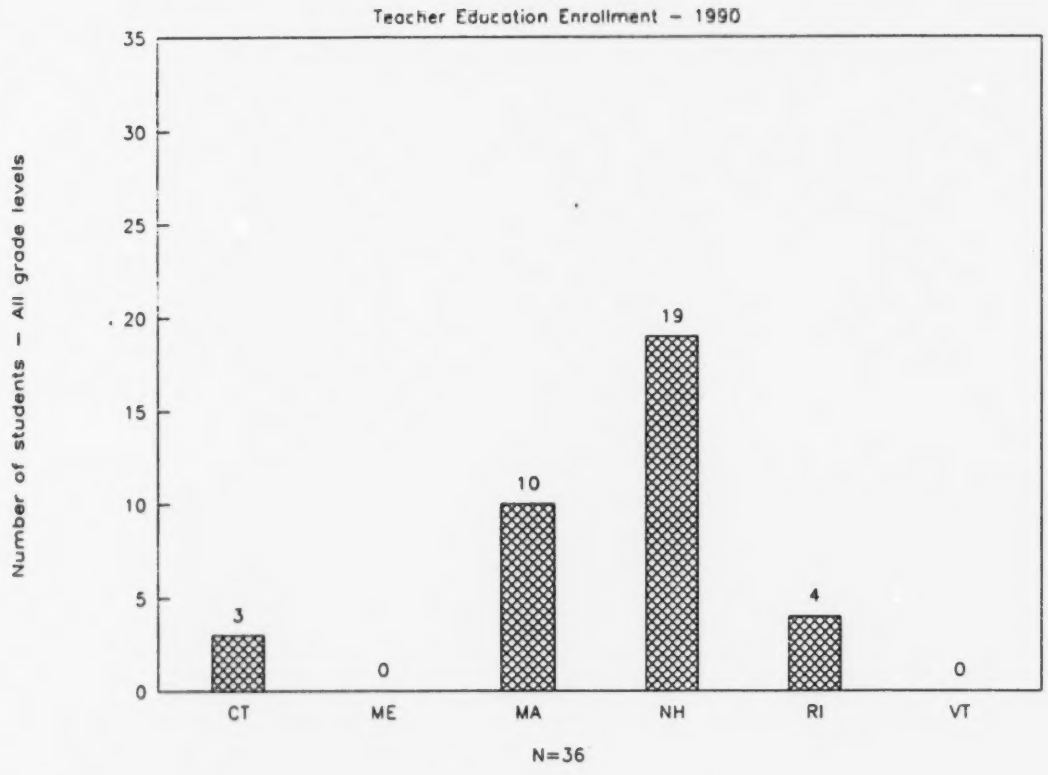


Graph 4+5

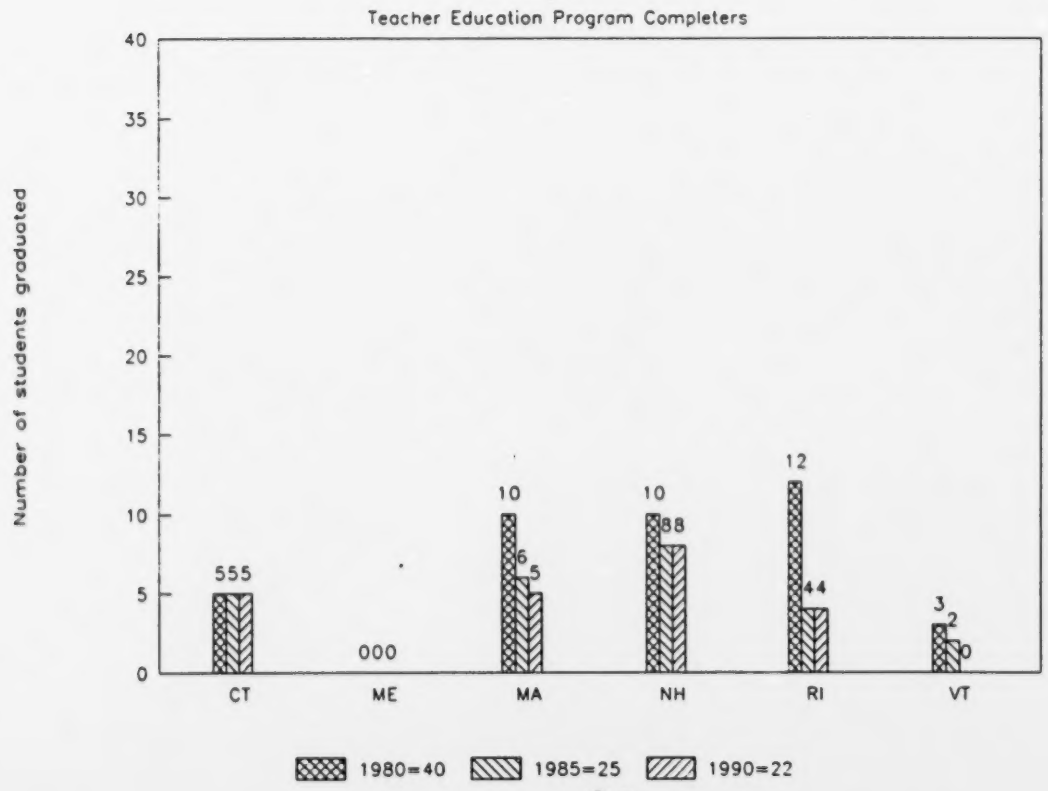
Secondary Schools & Teachers – 1990



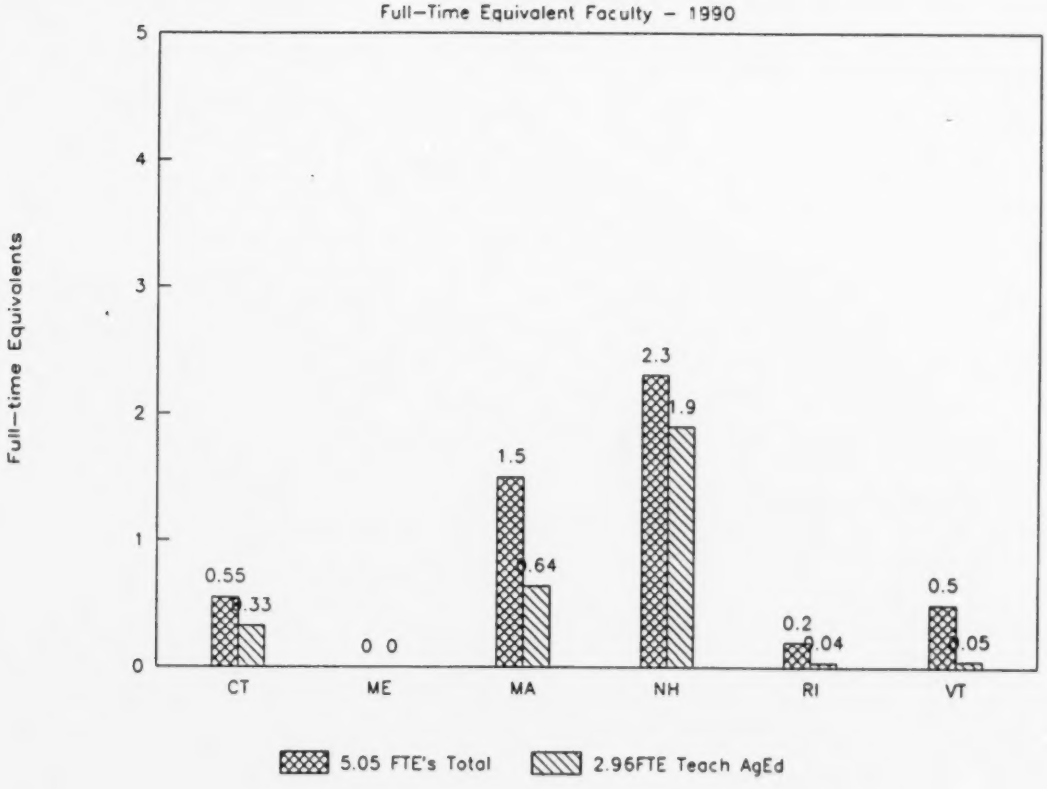
Graph 6



Graph 7



Graph 8


Full–Time Equivalent Faculty – 1990
Full–time Equivalents
5
4
3
2
1
0
0.55
0.33
0 0
1.5
0.64
2.3
1.9
0.2
0.04
0.5
0.05
CT
ME
MA
NH
RI
VT
5.05 FTE's Total
2.96FTE Teach AgEd